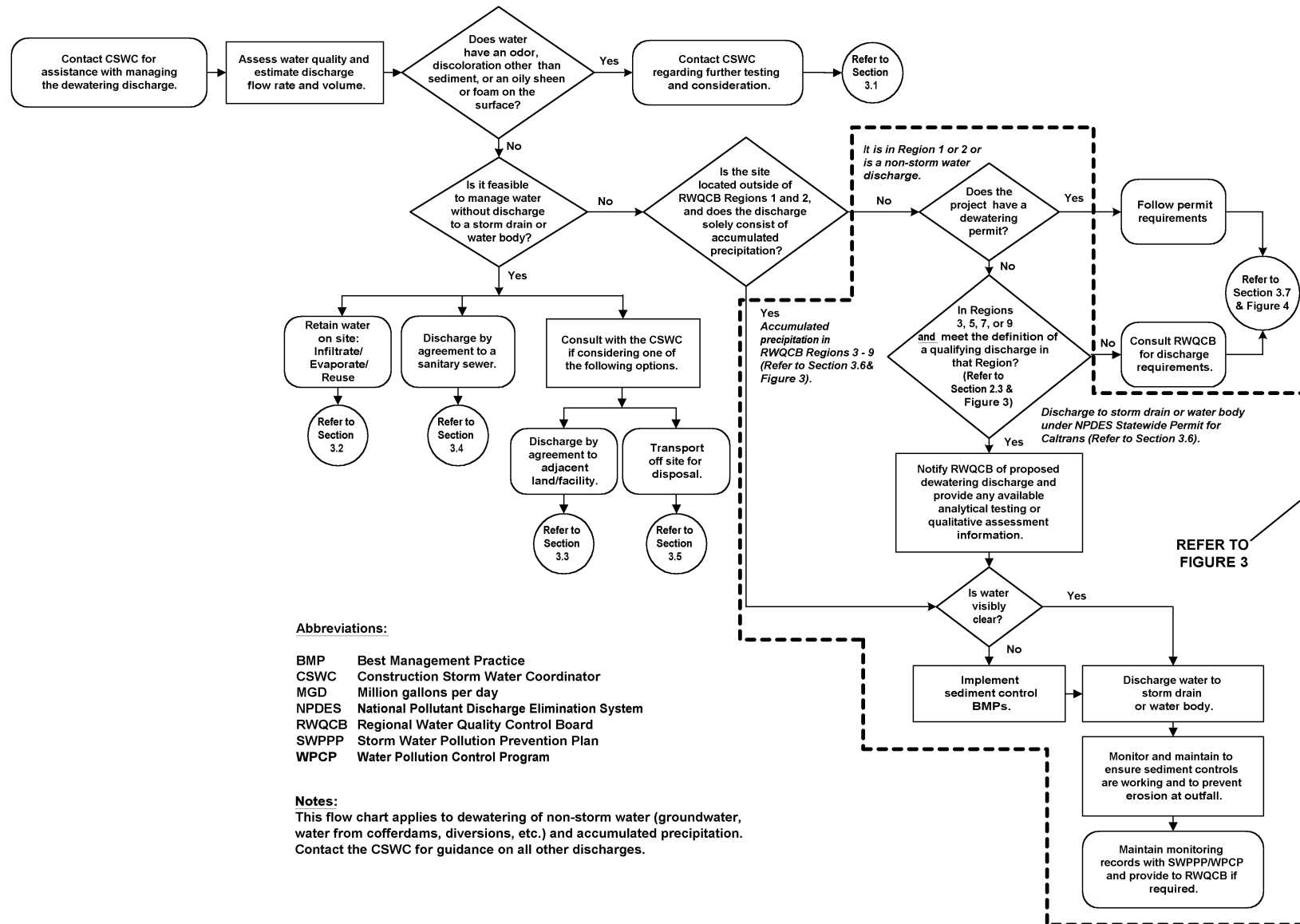


## **2.0 SELECTING A DEWATERING MANAGEMENT OPTION**

The Dewatering Operations Management Flow Chart (Figure 2) guides the Resident Engineer through the process of identifying feasible options for managing a dewatering operation and whether or not an NPDES permit applies to the operation. The flow chart contains references to other sections of the Field Guide for additional explanation or guidance.



**Figure 2 Dewatering Operations Management Flow Chart**

## 2.1 ASSESS WATER QUALITY

The quality of the water from dewatering operations determines which management options are feasible for the construction site. Each management option has a different standard for water quality requirements. For instance, the sanitary sewer may accept water with pollutants that cannot be discharged to the storm drain without treatment.

- 1) To aid in the assessment, use the **Water Quality Assessment** section of the *Water Quality and Discharge Parameters Assessment Form* in Appendix C and duplicated in Table 1 below. This form guides the Resident Engineer through a set of water quality questions that can be completed onsite.
  - a) *For assessing accumulated precipitation*, complete one form for each accumulation location that is expected to have unique characteristics. For example, if rainwater accumulates in multiple depressions adjacent to each other (assumed to have the same soil, land use, etc.), a single assessment can be made for the rain event. If rainwater accumulates in multiple locations distant from each other, assess the water quality at each location for the event.
  - b) *For assessing non-storm water* (groundwater, cofferdam, diversion water etc.), complete one form for each dewatering location that is expected to have unique characteristics. For example, if groundwater is being removed from multiple areas adjacent to each other (assumed to have the same soil, land use, etc.), a single assessment can be made for the rain event. If groundwater is being removed at multiple locations distant from each other, assess the water quality at each location.
- 2) If you answered YES to any of the Water Quality Assessment questions on the form, *or* you suspect that the water contains pollutants other than sediment, contact the Construction Storm Water Coordinator (CSWC) for assistance with additional testing and management options. Refer to Section 3.1 for more information about managing water containing pollutants other than sediment.
- 3) If you answered NO to all of the Water Quality Assessment questions on the form, estimate the discharge parameters, as described in Section 2.2.
- 4) File the completed forms with the Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP).

**Table 1 Water Quality Assessment Example**

Water Quality Assessment					
The following questions provide an initial assessment of the quality of the water to be discharged from the dewatering operation.					
<b>Common Sense Test</b>	1.	Review the project records. Is there any reason to suspect that the water may be polluted by something other than sediment?	No	Yes	
	2.	Is the water located in an area of known contamination?	No	Yes	
<b>Sight Test</b>	Does the water have an abnormal visual feature, such as (circle): Oily Sheen      Floating Foam      Murky Appearance      Unusual Color      Other				
<b>Smell Test</b>	Does the water have an odor? Possible odors include gasoline, petroleum, ammonia, sewage, etc.			No	Yes
If you answered YES to any of the above questions, explain:					
If you answered YES to any of the questions in the assessment or suspect that the water contains pollutants other than sediments, contact the Construction Storm Water Coordinator (CSWC) for assistance with additional testing and management options.					

## 2.2 ESTIMATE DISCHARGE PARAMETERS

Most RWQCBs and sanitary sewer districts have specific discharge requirements based on the flow rate, daily volume, total volume, and duration of the dewatering operation.

To estimate discharge parameters, use the **Discharge Parameters** section of the *Water Quality and Discharge Parameters Assessment Form* in Appendix C and duplicated in Table 2 below. This form guides the Resident Engineer through a set of calculations that can be completed onsite.

The pump sizes and flow rates in Table 3 can be used to aid in this estimate. The pump discharge flow and horsepower will vary depending on the system's total

dynamic head (distance and height required to pump).

- 1) Complete the Discharge Parameters form as follows:
  - a) *For assessing accumulated precipitation*, complete one form for each accumulation location for the rain event.
  - b) *For assessing non-storm water (groundwater, cofferdam or diversion water, etc.)*, complete one form for each dewatering location.
- 2) File the completed forms with the SWPPP or WPCP.

**Table 2 Discharge Parameter Calculation Sheet Example**

DISCHARGE PARAMETERS		
To estimate water discharge parameters, answer the following questions and document the results below.		
<b>Origin of Water</b>	Is the discharge from (circle one): Groundwater      Cofferdam/Diversion      Accumulated Precipitation      Other (specify)	
	Will the discharge be intermittent (associated with each rainstorm) or continuous (dewatering one area for a long period)? (circle) Intermittent Continuous	
<b>Daily Flow Rate</b>	Estimate the total quantity of water and proposed discharge rate for each daily discharge event ( $Q_d$ , gallons per day). This can be estimated from the pump discharge rate and the expected daily total of hours the pump will be run. $Q_d, \text{gpd} = \text{___ gals/min pump rate} \times 60 \text{ mins/hr} \times \text{___ hrs discharge}$	$Q_d = \text{___ gpd}$
<b>Duration</b>	What is the expected duration of the dewatering operation?	___ (days)
<b>Total Volume</b>	What is the estimated total discharge for the life of the project ( $V_T$ )? To estimate the total discharge, multiply the daily flow rate ( $Q_d$ ) by the estimated duration.	$V_T = \text{___ Gallons}$
<b>Comments:</b>		

**Table 3 Typical Pump Flow Rates**

Pump Size (submersible)	Typical Flow Rates*
1.5-inch	90 to 120 gpm
2-inch	90 to 300 gpm
3-inch	300 to 800 gpm
4-inch	400 to 1300 gpm
6-inch	400 to 1800 gpm

\*Based on manufacturers' general information

### 2.3 IS IT A QUALIFYING NON-STORM WATER DISCHARGE?

In RWQCB Regions 3, 5, 7, and 9, qualifying discharges of non-storm water to a storm drainage system or water of the U.S. are allowed in accordance with the NPDES Statewide Permit for Caltrans.

In **Regions 3, 5, and 7**, qualifying discharges are minor discharges of non-storm water (groundwater, water from cofferdams or diversions, storm water commingled with non-storm water) that are free of pollutants other than sediment. A minor discharge is defined as a discharge that (1) is less than 0.25 mgd and (2) has a duration of four or fewer months continuous discharge, or the equivalent of four months non-continuous discharge. For qualifying discharges, the RWQCB must be notified and approve the proposed discharge prior to any removal of water from the construction site. For all other discharges of non-storm water, contact the RWQCB for guidance.

In **Region 9**, discharges of groundwater to surface waters other than the San Diego Bay are allowed under the NPDES Statewide Permit for Caltrans if the discharge is less than 0.1 mgd and does not contain pollutants. For qualifying discharges, the RWQCB must be notified and approve the proposed discharge prior to any removal of water from the construction site. For all other discharges of non-storm water, contact the RWQCB for guidance.

**Other Regions** do not allow the discharge of non-storm water without a RWQCB NPDES permit or permission.

The questions in Tables 4 and 5 provide guidance for determining if a non-storm water dewatering operation qualifies for discharge under the NPDES Statewide Permit for Caltrans in Regions 3, 5, 7, or 9.

**Table 4 Qualifying Non-Storm Water Discharges in Regions 3, 5 or 7**

1) Estimate the flow (gallons per day) to be discharged:
a) On the <b>Discharge Parameters</b> section of the <i>Water Quality and Discharge Parameters Assessment Form</i> (Appendix C), estimate the Daily Flow Rate ( $Q_d$ ) to be discharged from each of the dewatering locations in gallons per day (gpd).
b) Add the Daily Flow Rates for all dewatering locations together. Total = _____ gpd
c) If the total is greater than 0.25 mgd (> 250,000 gpd), the dewatering operation does not qualify for regulation under the NPDES Statewide Permit for Caltrans. Contact the RWQCB for guidance.
d) If the total is less than 0.25 mgd, continue with (2).
2) What is the duration of the discharge? Duration = _____ (hours/days/months)
a) If less than 4 months continuous, or the equivalent of 4 months non-continuous, this is a qualifying discharge. Notify the RWQCB of the proposed discharge and discharge under the NPDES Statewide Permit for Caltrans, as described in Section 3.6.
b) If it exceeds 4 months continuous, or the equivalent of 4 months non-continuous, the dewatering operation does not qualify for regulation under the NPDES Statewide Permit for Caltrans. Contact the RWQCB for guidance.

**Table 5 Qualifying Non-Storm Water Discharges in Region 9**

1) Is it a discharge of unpolluted groundwater to a surface water other than San Diego Bay?
a) If YES, continue with question (2).
b) If NO, the dewatering operation does not qualify for regulation under the NPDES Statewide Permit for Caltrans. Contact RWQCB Region 9 for guidance.
2) Estimate the flow (gallons per day) to be discharged:
a) On the <b>Discharge Parameters</b> section of the <i>Water Quality and Discharge Parameters Assessment Form</i> (Appendix C), estimate the Daily Flow Rate ( $Q_d$ ) to be discharged from each of the dewatering locations in gallons per day (gpd).
b) Add the Daily Flow Rates for all dewatering locations together. Total = _____ gpd
c) If the total is greater than 0.1 mgd (100,000 gpd), the dewatering discharge does not qualify for regulation under the NPDES Statewide Permit for Caltrans. Contact RWQCB Region 9 for guidance.
d) If the total is less than 0.1 mgd (100,000 gpd), the dewatering discharge may qualify for regulation under the NPDES Statewide Permit for Caltrans. Contact RWQCB Region 9 for approval.